STEREO POWER AMPLIFIER

KM-105

SERVICE MANUAL

KENWOOD

TRIO-KENWOOD CORPORATION

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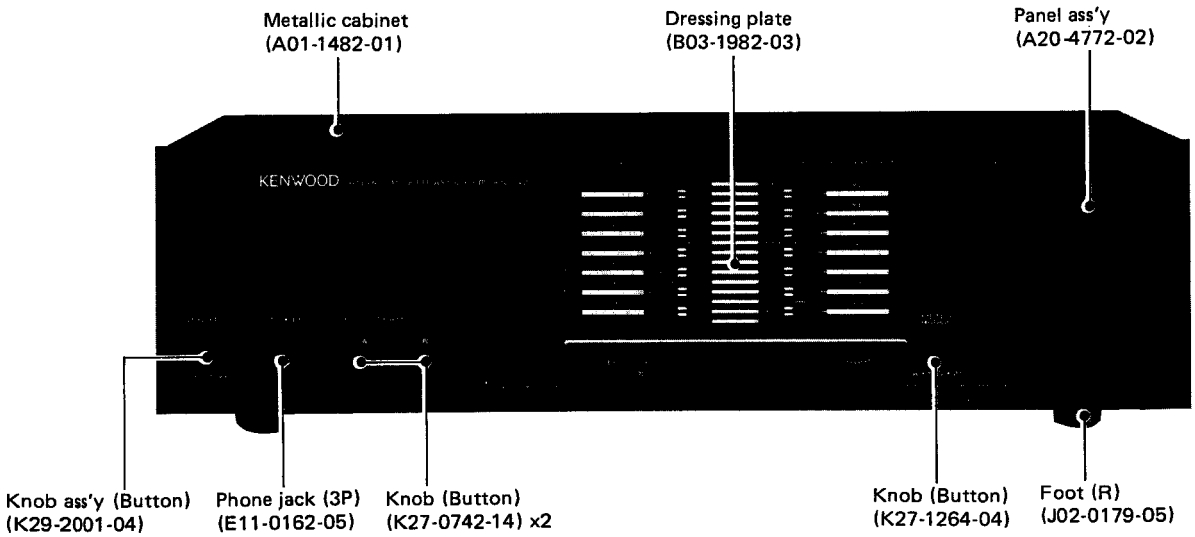
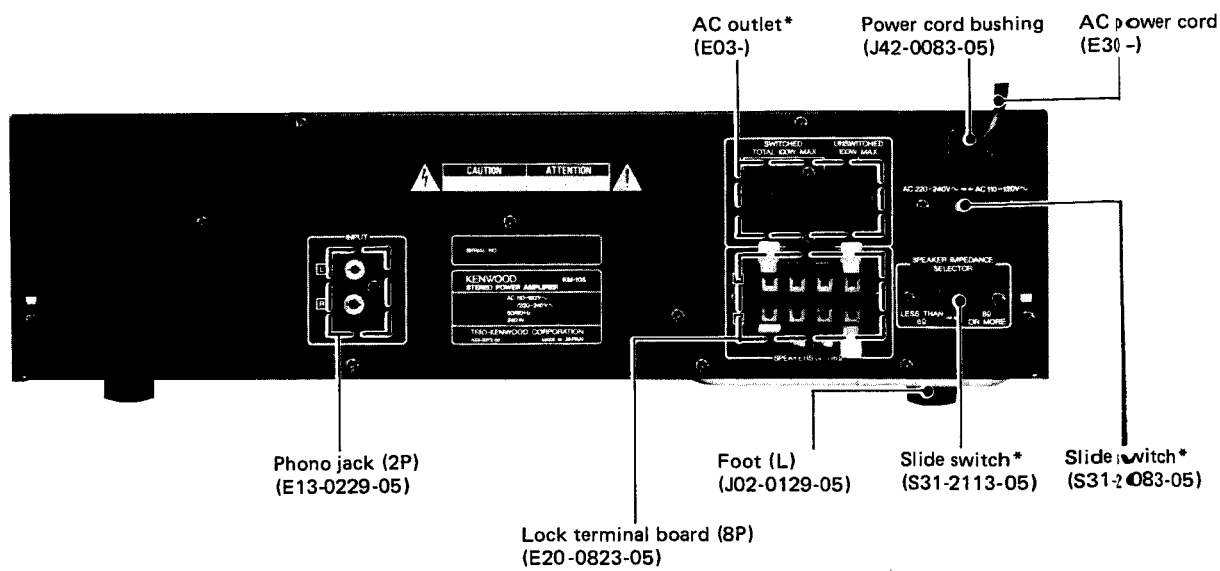


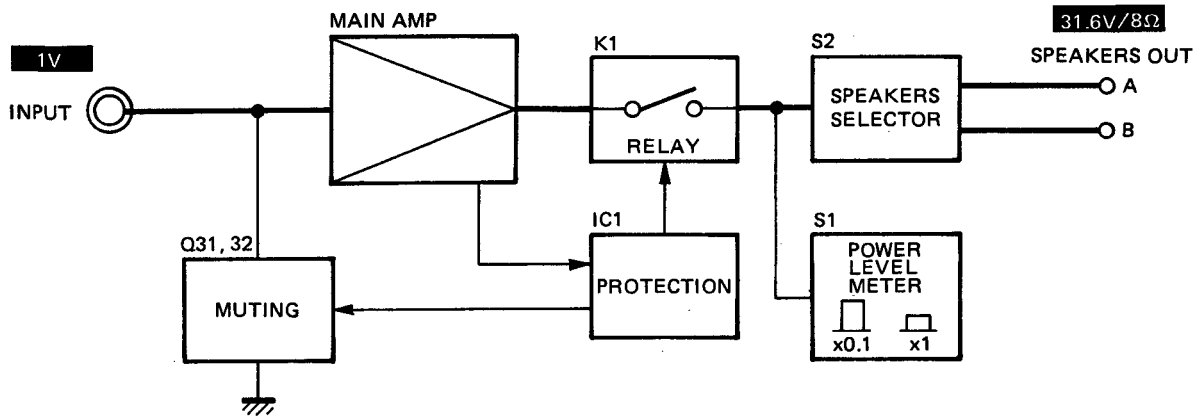


*Refer to parts list on page 6.

Note : Refer to specifications on page 3.

BLOCK LEVEL DIAGRAM/CIRCUIT DESCRIPTION

BLOCK LEVEL DIAGRAM



CIRCUIT DESCRIPTION

Description of Components

POWER AMPLIFIER (X07-2270-10)

Components	Application/function	Operation/condition/compatibility
Q1~4	Initial stage differential amplifier	Low noise.
Q5~8	2nd stage differential amplifier	
Q9, 10	3rd stage amplifier	Class A cascade current amplifier.
Q11, 12	3rd stage amplifier	Class A cascade voltage amplifier.
Q13, 14	Bias temperature compensation	
Q15~18	Class B driver	
Q19~22	Power amplifier	
Q23~30	Current protection	
Q31, 32	Input muting	
Q33	Relay driver IC	Current protection.
Q34	Constant voltage control	
Q35, 36	Muting driver	
Q37~40	LED driver	

ADJUSTMENT/REGLAGE/ABGLEICH

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	IDLE CURRENT	–	Connect a DC voltmeter across CP1 (L) CP2 (R)	VOLUME: 0	VR1 (L) VR2 (R)	9~18mV	(a)

REGLAGE

N°	ITEM	REGLAGE DE L' ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L' AMPLIFICATEUR	POINS L' ALIGNEMENT	ALIGNER POUR	FIG.
1	COURANT DE POLARISATION	–	Connecter un voltmètre de CC sur CP1 (G) CP2 (D)	VOLUME: 0	VR1 (G) VR2 (D)	9~18mV	(a)

ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VORSTARKER EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FUR	ABB.
1	LEERLAUFSTROM	–	Einen Gleichspannungs-messer über CP1 (L) CP2 (R) anschließen.	VOLUME: 0	VR1 (L) VR2 (R)	9~18mV	(a)

SPECIFICATIONS

Audio Section

Power Output

125 watts* per channel minimum RMS, both channels driven, at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.03% total harmonic distortion.

Both Channels Driven . . . . . 135 W + 135 W at 1kHz, 8 Ω (except USA, U.K. and Europe) 110 W + 110 W at 1kHz, 4 Ω (except USA, U.K. and Europe)

Music Power Output . . . . . 250 W + 250 W at 8Ω (except USA, U.K. and Europe)

Total Harmonic Distortion

AUX → SPKR (8 Ω)/Power in → SPKR (8 Ω)

(20 Hz to 20,000 Hz) . . . . . 0.03% at Rated output 0.015% at 1/2 Rated output

Phono → SPKR (8 Ω)/

At –20 dB Volume Level . . . 0.002% at 1,000 Hz, 1/2 Rated output

Intermodulation Distortion . . . 0.002% at rated output

(60 Hz : 7 kHz = 4 : 1) into 8 ohms

Damping Factor . . . . . 35 (50 Hz)

Power Bandwidth . . . . . 10 Hz to 50,000 Hz at 0.2% T.H.D. 8 ohms

Frequency Response

Overall (AUX → SPKR) . . . . 5 Hz to 200,000 Hz + 0 dB, –3 dB

Input Sensitivity/Impedance

POWER IN 1V

Signal-to-Noise Ratio (IHF. A)

MAIN IN (IHF-66) . . . . . 120 dB

General

Power Supply Voltage,

Frequency . . . . . 120V, 60 Hz (USA & Canada models), 220 V, 50 Hz (Europe model), 240 V, 50 Hz (U.K. model) or 110 - 120 V/220 - 240 V 50/60 Hz, switchable (Other countries)

Power Consumption . . . . . 4A (USA & Canada models) 240 W (Other countries with Europe and U.K. exceptions)

AC Outlet . . . . . Switched 100 W Unswitched 100 W

Dimensions . . . . . W 420 mm H 123 mm D 268.5 mm

Weight

Net . . . . . 7.9 kg

Gross . . . . . 8.7 kg

* Measured pursuant to Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier in USA.

Note : We follow a policy of continuous advancements in developments. For this reason specifications may be changed without notice.

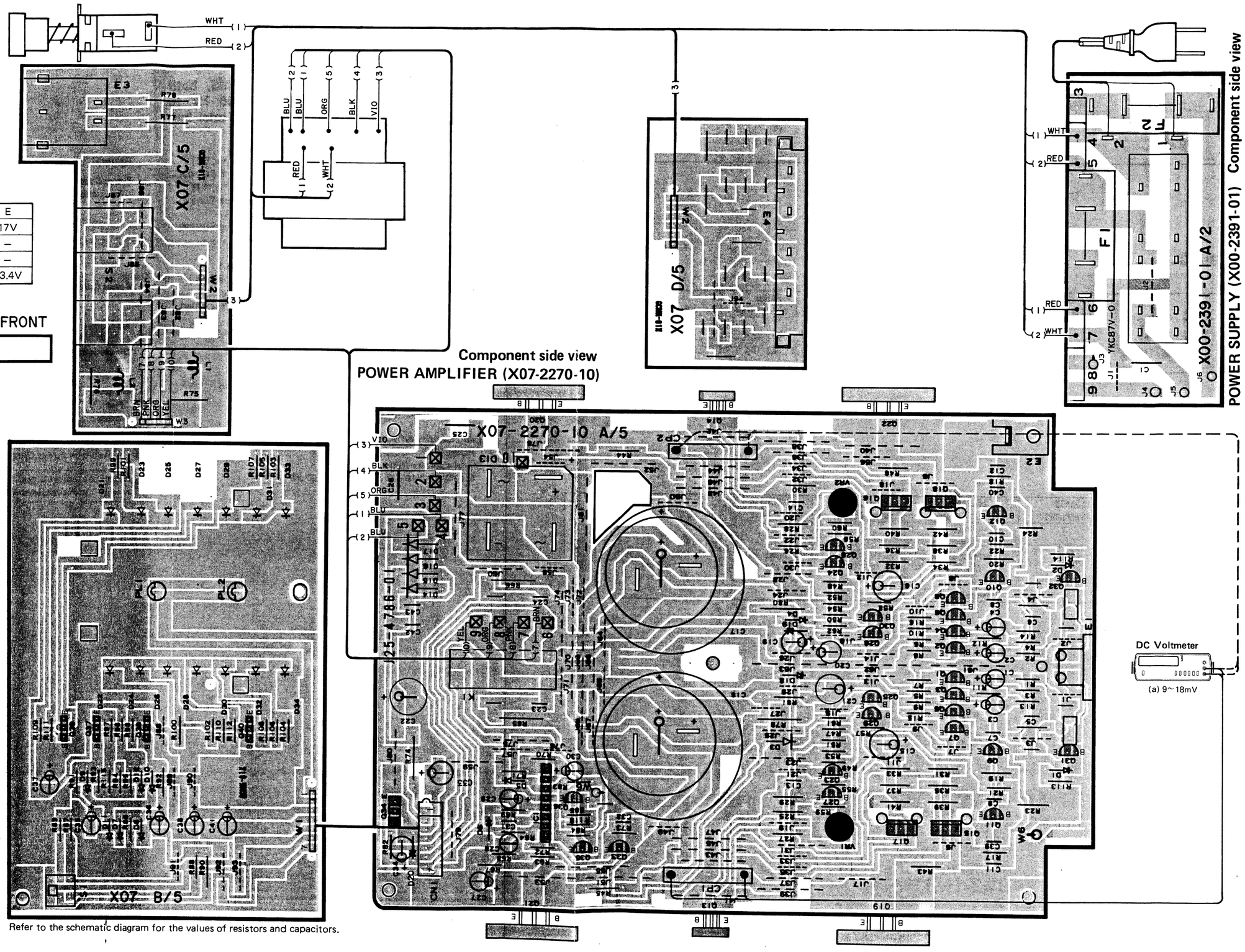
PC BOARD

(X07-2270-10)

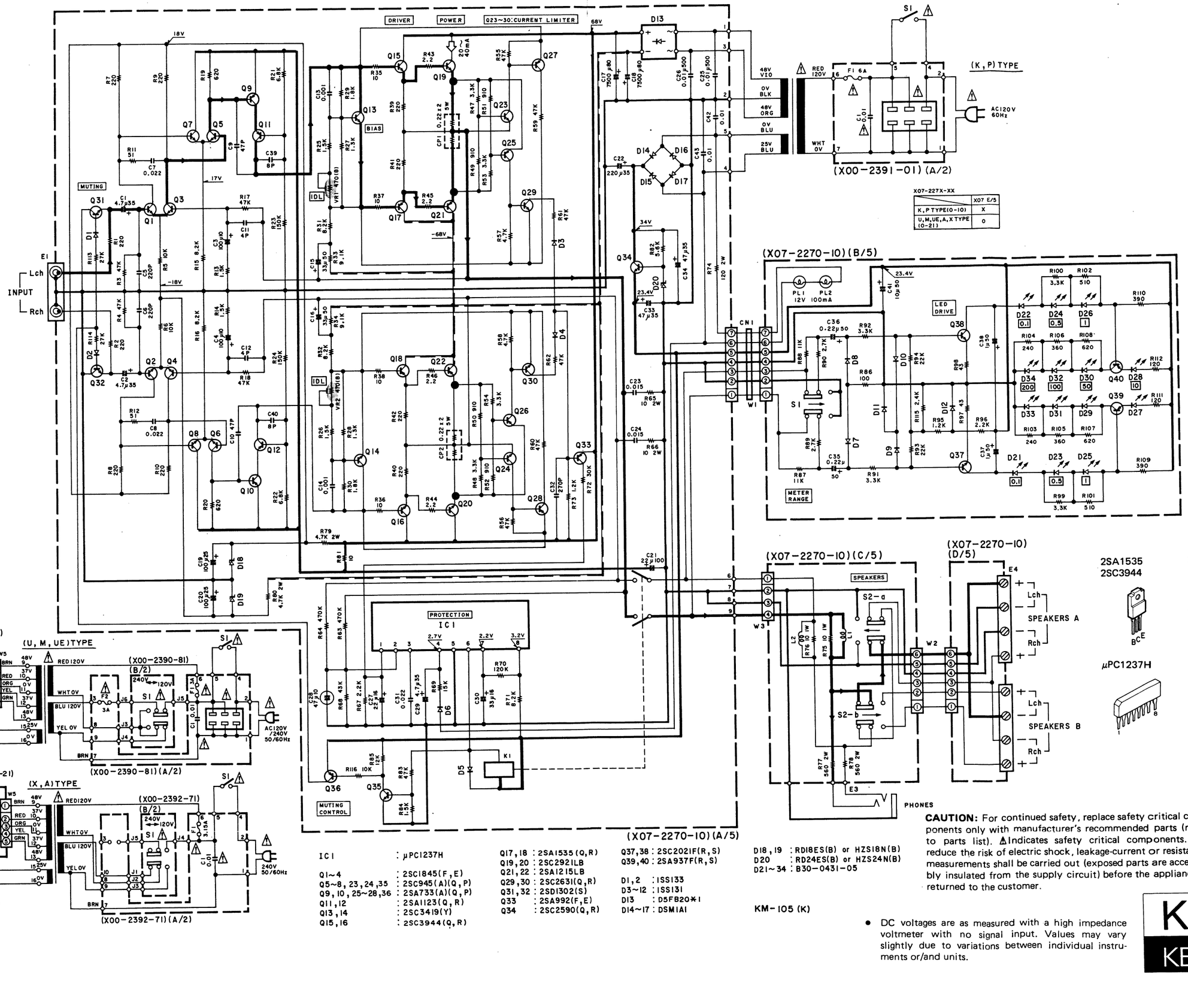
	B	C	E
Q5,Q7	–	–	17V
Q17,Q18	–	–68V	–
Q21,Q22	–	–68V	–
Q34	–	34V	23.4V

IC1

4	2.7V
7	2.2V
8	3.2V



Refer to the schematic diagram for the values of resistors and capacitors.



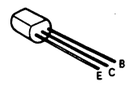
X07-227X-XX	X07 E/5
K,P TYPE(0-10)	X
U,M,UE,A,X TYPE (0-21)	0

IC1 : μPC1237H

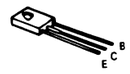
Q1~4 : 2SC1845(F,E)
Q5~8,23,24,35 : 2SC945(A)(Q,P)
Q9,10,25~28,36 : 2SA733(A)(Q,P)
Q11,12 : 2SA1123(Q,R)
Q13,14 : 2SC3419(Y)
Q15,16 : 2SC3944(Q,R)
Q17,18 : 2SA1535(Q,R)
Q19,20 : 2SC2921LB
Q21,22 : 2SA1215LB
Q29,30 : 2SC2631(Q,R)
Q31,32 : 2SD1302(S)
Q33 : 2SA992(F,E)
Q34 : 2SC2590(Q,R)
Q37,38 : 2SC2021F(R,S)
Q39,40 : 2SA937F(R,S)

D1,2 : 1SS133
D3~12 : 1SS131
D13 : D5FB20*1
D14~17 : DSM1A1
D18,19 : RD18ES(B) or HZS18N(B)
D20 : RD24ES(B) or HZS24N(B)
D21~34 : B30-0431-05

2SA1123
2SA733(A)
2SA992
2SC1845
2SC2631
2SC945(A)
2SD1302

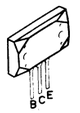


2SC2590



2SA937F
2SC2021F

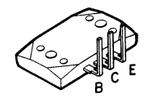
2SA1215LB



2SC3419

2SA1535
2SC3944

2SC2921LB



μPC1237H

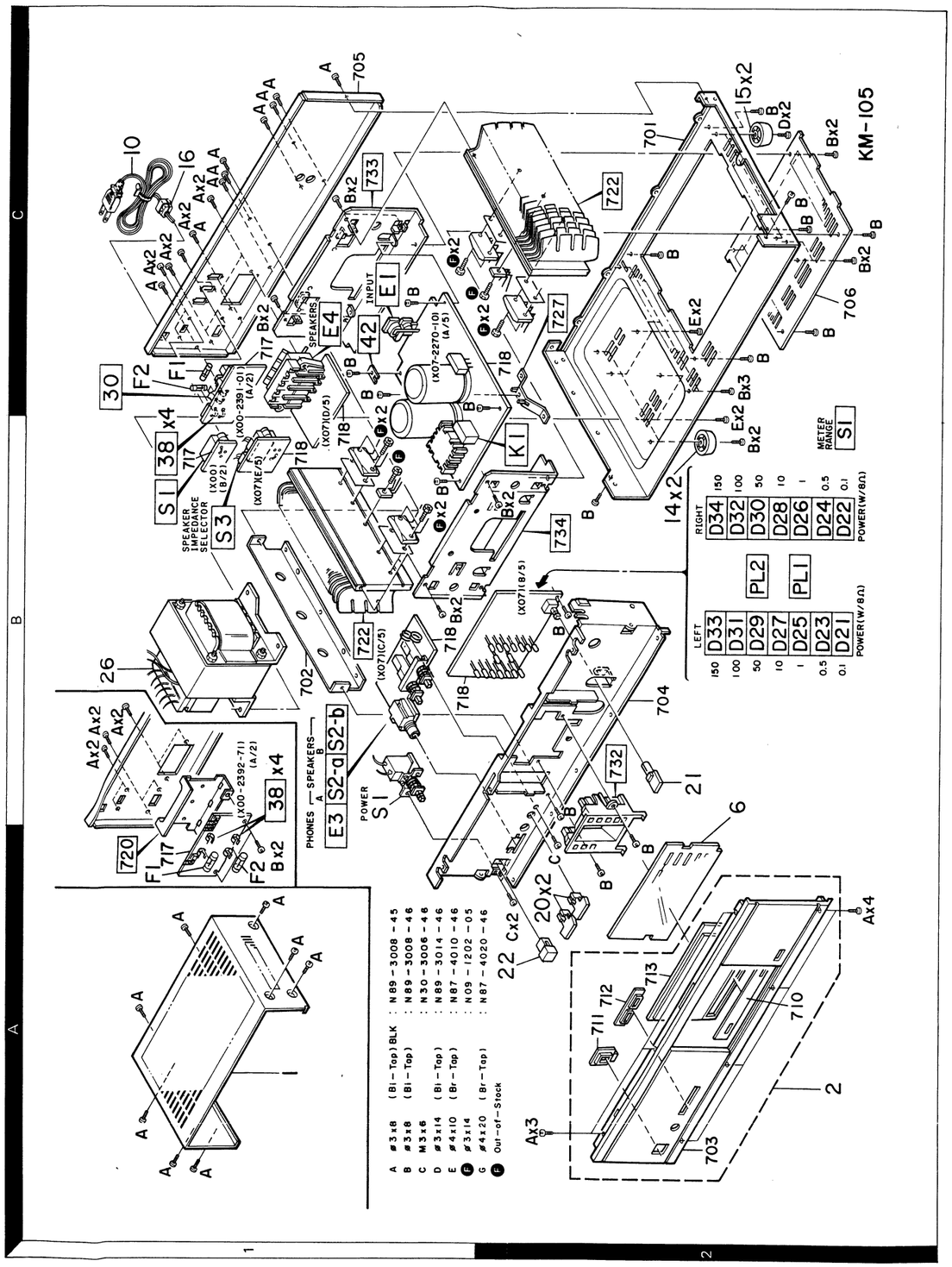
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

KM-105 (K)

- DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

KM-105
KENWOOD

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

	Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
				KM-105			
	1	1A	*	A01-1482-01	METALLIC CABINET		
	2	2A	*	A20-4772-02	PANEL ASSY		
	6	2B	*	B03-1982-03	DRESSING PLATE		
	-			B46-0092-03	WARRANTY CARD	K	
	-			B46-0094-03	WARRANTY CARD	UUE	
	-			B46-0095-03	WARRANTY CARD	UUE	
	-			B46-0096-13	WARRANTY CARD	X	
	-			B46-0121-03	WARRANTY CARD	P	
	-		*	B50-6108-00	INSTRUCTION MANUAL(ENGLISH)		
	-		*	B50-6109-00	INSTRUCTION MANUAL(FRENCH)	PMXA	
	-		*	B50-6110-00	INSTRUCTION MANUAL(SPANISH)	MA	
	-		*	B50-6111-00	INSTRUCTION MANUAL(ARABIC)	MA	
	-			B58-0223-04	CAUTION CARD (PRE-SET 120V)	U	
	-			B58-0269-04	CAUTION CARD	K	
	-			B58-0513-04	CAUTION CARD (PRESET220-240)	UE	
	-			B59-0092-00	SERVICE DIRECTORY	UUE	
⚠	10	1C		E30-0459-05	AC POWER CORD	A	
⚠	10	1C		E30-0812-05	AC POWER CORD	UMUE	
⚠	10	1C		E30-0974-05	AC POWER CORD	KP	
⚠	10	1C		E30-1341-05	AC POWER CORD	X	
⚠	F1	1C		F05-3121-05	FUSE (SEMKO) 250V T3.15A	XA	
⚠	F1	1C		F05-6027-05	FUSE (UL) 250V 6A	KP	
⚠	F1 ,2	1C		F05-3022-05	FUSE (250V 3A)	UMUE	
	-		*	H01-7110-04	ITEM CARTON CASE		
	-		*	H10-1892-02	POLYSTYRENE FOAMED FIXTURE		
	-		*	H10-1893-02	POLYSTYRENE FOAMED FIXTURE		
	-			H25-0223-04	PROTECTION BAG (750X350)		
	-			H25-0232-04	PROTECTION BAG (235X350)		
	14	2B		J02-0129-05	FOOT (L)		
	15	2C	*	J02-0179-05	FOOT (R)		
⚠	16	1C		J42-0083-05	POWER CORD BUSHING		
	-			J61-0307-05	WIRE BAND		
	20	2A		K27-0742-14	KNOB (BUTTON) (SPEAKERS)		
	21	2B		K27-1264-04	KNOB (BUTTON) METER RANGE		
	22	2A		K29-2001-04	KNOB ASSY(BUTTON)POWER		
⚠	26	1B	*	L01-7071-05	POWER TRANSFORMER	KP	
⚠	26	1B	*	L01-7075-05	POWER TRANSFORMER	UMUEXA	
⚠	S1	1B		S40-1094-05	PUSH SWITCH (POWER TYPE)		
				POWER SUPPLY (X00-2391-01)			
⚠	C1			C91-0023-05	CERAMIC 0.01UF AC250V	UMUE	
⚠	C1			C91-0647-05	CERAMIC 0.01UF P	KPXA	
⚠	30	1C	*	E03-0077-05	AC OUTLET	UMUE	
⚠	30	1C	*	E03-0078-05	AC OUTLET	KP	
	38	1B,1C		J13-0041-05	FUSE CLIP	KPUMUE	
	38	1B,1C		J13-0054-05	FUSE CLIP	XA	
	-			J61-0307-05	WIRE BAND	X	
⚠	S1	1B		S31-2083-05	SLIDE SWITCH (POWER TYPE)	UMUEXA	

E: Scandinavia & Europe H:Audio Club K: USA P: Canada W:Europe
A : Saudi Arabia T: England U: PX(Far East, Hawaii)
UE : AAFES(Europe) X: Australia M: Other Areas

⚠ indicates safety critical components.

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
POWER AMPLIFIER (X07-2270-10)						
D21 -34	2B		B30-0431-05	LED(LN21CPH)		
PL1 ,2	2B	*	B30-1140-05	LAMP		
C1 ,2			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C3 ,4			CE04KW1A101M	ELECTRO 100UF 10WV		
C5 ,6			CC45FSL1H221J	CERAMIC 220PF J		
C7 ,8			CF92FV1H223J	MF 0.022UF J		
C9 ,10			CC45FSL1H470J	CERAMIC 47PF J		
C11 ,12			CC45FSL1H040C	CERAMIC 4.0PF C		
C13 ,14			CF92FV1H102J	MF 1000PF J		
C15 ,16		*	CE04KW1H330M	ELECTRO 33UF 50WV		
C17 ,18			C90-1318-05	ELECTRO 7500UF 80WV		
C19 ,20			CE04KW1E101M	ELECTRO 100UF 25WV		
C21		*	CE04KW2A220M	ELECTRO 22UF 100WV		
C22			CE04KW1V221M	ELECTRO 220UF 35WV		
C23 ,24			CF92FV1H153J	MF 0.015UF J		
C25 ,26			CK45FE2H103P	CERAMIC 0.010UF P		
C27			CE04KW1C220M	ELECTRO 22UF 16WV		
C28		*	C90-1334-05	ELECTRO 47UF 10WV		
C29			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C30			CE04KW1C330M	ELECTRO 33UF 16WV		
C31			CF92FV1H223J	MF 0.022UF J		
C32			CC45FSL1H271J	CERAMIC 270PF J		
C33 ,34			CE04KW1V470M	ELECTRO 47UF 35WV		
C35 ,36			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C37 ,38			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C39 ,40			CC45FSL1H080D	CERAMIC 8.0PF D		
C41			CE04KW1H100M	ELECTRO 10UF 50WV		
C42 ,43			CK45FF1H103Z	CERAMIC 0.010UF Z		
42	1C		E23-0125-05	TERMINAL		
E1	1C		E13-0229-05	PHONO JACK (2P) INPUT		
E3	1A		E11-0162-05	PHONE JACK (3P)		
E4	1C		E20-0823-05	LOCK TERMINAL BOARD(8P) SPKRS		
L1 ,2			L39-0085-05	PHASE-COMPENSATION COIL		
F	1B,1C		N09-1202-05	TAPPING SCREW (Ø3X14)		
CP1 ,2			R90-0187-05	MULTI-COMP 0.22X2 K 5W		
R19 ,20			RD14AB2E621J	FL-PROOF RD 620 J 1/4W		
R25 ,26			RD14AB2E152J	FL-PROOF RD 1.5K J 1/4W		
R27 ,28			RD14AB2E132J	FL-PROOF RD 1.3K J 1/4W		
R29 ,30			RD14AB2E182J	FL-PROOF RD 1.8K J 1/4W		
R31 ,32			RD14AB2E822J	FL-PROOF RD 8.2K J 1/4W		
R33 ,34		*	RD14AB2E912J	FL-PROOF RD 9.1K J 1/4W		
R35 -38			RD14AB2E100J	FL-PROOF RD 10 J 1/4W		
R39 -42			RD14AB2E221J	FL-PROOF RD 220 J 1/4W		
R43 -46			RD14AB2E2R2J	FL-PROOF RD 2.2 J 1/4W		
R65			RS14DB3D100J	FL-PROOF RS 10 J 2W		
R66			RS14KB3D100J	FL-PROOF RS 10 J 2W		
R74			RS14DB3D121J	FL-PROOF RS 120 J 2W		
R75 ,76			RS14KB3A100J	FL-PROOF RS 10 J 1W		
R77 ,78			RS14DB3D561J	FL-PROOF RS 560 J 2W		
R79 ,80		*	RS14DB3D472J	FL-PROOF RS 4.7K J 2W		

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⚠ indicates safety critical components.

KM-105

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
R81			RD14AB2E100J	FL-PROOF RD 10 J 1/4W		
VR1 ,2			R12-0094-05	TRIMMING POT. (470) IDL		
K1	2B		S51-2078-05	MAGNETIC RELAY		
S1	1B		S40-2323-05	PUSH SWITCH (METER RANGE)		
S2	1B		S42-2138-05	MULTIPLE PUSH SWITCH(SPEAKERS)		
S3	1B	*	S31-2113-05	SLIDE SWITCH (SPKR IMP SEL)	UMUEXA	
D1 ,2			1SS133	DIODE		
D3 -12			1SS131	DIODE		
D13			D5FB20*1	DIODE		
D14 -17			DSM1A1	DIODE		
D18 ,19		*	HZS18N(B)	ZENER DIODE		
D18 ,19		*	RD18ES(B)	ZENER DIODE		
D20		*	HZS24N(B)	ZENER DIODE		
D20		*	RD24ES(B)	ZENER DIODE		
IC1			UPC1237H	IC(PROTECTION)		
Q1 -4			2SC1845(F,E)	TRANSISTOR		
Q5 -8			2SC945(A)(Q,P)	TRANSISTOR		
Q9 ,10			2SA733(A)(Q,P)	TRANSISTOR		
Q11 ,12			2SA1123(Q,R)	TRANSISTOR		
Q13 ,14			2SC3419(Y)	TRANSISTOR		
Q15 ,16		*	2SC3944(Q,R)	TRANSISTOR		
Q17 ,18		*	2SA1535(Q,R)	TRANSISTOR		
Q19 ,20		*	2SC2921LB	TRANSISTOR		
Q21 ,22		*	2SA1215LB	TRANSISTOR		
Q23 ,24			2SC945(A)(Q,P)	TRANSISTOR		
Q25 -28			2SA733(A)(Q,P)	TRANSISTOR		
Q29 ,30			2SC2631(Q,R)	TRANSISTOR		
Q31 ,32			2SD1302(S)	TRANSISTOR		
Q33			2SA992(F,E)	TRANSISTOR		
Q34			2SC2590(Q,R)	TRANSISTOR		
Q35			2SC945(A)(Q,P)	TRANSISTOR		
Q36			2SA733(A)(Q,P)	TRANSISTOR		
Q37 ,38		*	2SC2021F(R,S)	TRANSISTOR		
Q39 ,40		*	2SA937F(R,S)	TRANSISTOR		

E: Scandinavia & Europe H:Audio Club K: USA P: Canada W:Europe
A : Saudi Arabia T: England U: PX(Far East, Hawaii)
UE : AAFES(Europe) X: Australia M: Other Areas

⚠ indicates safety critical components.

SPECIFICATION :

Refer to specifications on page 3.

Note :

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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